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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,938

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Norbert Grunenberg

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2184

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EXAMINER

LIN, ING HOUR

ART UNIT

PAPER NUMBER

1793

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/521,938	Applicant(s) GRUNENBERG ET AL.	
	Examiner Ing-Hour Lin	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005 and 18 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 2 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/21/06 &amp; 8/18/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: In specification, page 2, paragraph 8, the disclosure based on claims 1 and 5 is objected because the claims may be changed during the examining process.

Appropriate correction is required.

### *Claim Objections*

2. Claims 2 and 12 are objected to because of the following informalities: In claims 2 and 12, line 9, "the at least one" should be changed to -- at least one --. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hoyer (DE 4409750).

Hoyer (col. 2, lines 22+) teaches the claimed die or pressure casting method and cast product of cylinder crankcase or cylinder block casing 5, comprising a row of cylinder barrels or double-walled cylinder insert or liner 6 and partially closed water jacket 7 located at the upper part of the cylinder barrels or double-walled cylinder insert or liner 6 and facing the cylinder head 1.

5. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Li (US 6,349,681).

Hoyer (col. 2, lines 22+) teaches claimed cast aluminum cylinder crankcase or six cylinder block 10, comprising a row of cylinder barrels or double-walled cylinder iron insert or liner and partially closed water jackets 24, 26 located at the upper part of the cylinder barrels or double-walled cylinder insert or liner having a deck face separating and facing the cylinder head (col.3, lines 10+), wherein at least one cooling passage or five heat pipe of copper are cast in place at each web region or common cylinder wall 16 (col. 4, lines 17+) between one five pairs of cylinders 12A-12F.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyer (DE 4409750) in view of Fischer et al (US 6,354,259).

Hoyer fails to teach the use of gray cast iron and hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert or liner.

However, Fischer et al (col. 1, lines 33+) teach the use of wearing or frictional satisfactory gray cast iron and hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert and teach the use of a low-alloy aluminum insert or liner thermally sprayed with layers 2-5 for the purpose of economically coating and improving wearing resistant (col. 3, lines 56+). It would have been obvious to one having ordinary skill in the art to provide Hoyer the use of wearing or frictional satisfactory gray cast iron and hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert and the use of a low-alloy aluminum insert or liner thermally sprayed with layers 2-5 for as taught by Fischer et al in order to satisfy wear resistant requirement (col. 1, lines 33+ and col. 3, lines 56+).

10. Claims 4-6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US 6,349,681) in view of Fischer et al (US 6,354,259).

Li fails to teach the use of hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert or liner.

However, Fischer et al (col. 1, lines 33+) teach the use of wearing or frictional satisfactory hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert and teach the use of a low-alloy aluminum insert or liner thermally sprayed with layers 2-5 for the purpose of economically coating and improving wearing resistant (col. 3, lines 56+). It would have been

obvious to one having ordinary skill in the art to provide Li the use of wearing or frictional satisfactory hypereutectic aluminum-silicon alloy in casting the row of cylinder barrels insert and the use of a low-alloy aluminum insert or liner thermally sprayed with layers 2-5 for as taught by Fischer et al in order to satisfy wear resistant requirement (col. 1, lines 33+ and col. 3, lines 56+).

11. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyer (DE 4409750) in view of Baltz et al (US 6,298,899).

Hoyer fails to teach the use of a lost core or a water jacket core in casting the row of cylinder barrels insert or liner.

However, Baltz et al (col. 3, lines 47+) teach the use of a lost core or a water jacket core assembly 10 including pre-formed bridge cores 14 at web regions between the cylinder barrels or cylinder bores 16 in casting the row of cylinder barrels for the purpose of effectively producing a double-walled cylinder insert containing water jacket and having accurate cooling channels or passages at the thinner web regions between the cylinder barrels (col. 5, lines 39+). It would have been obvious to one having ordinary skill in the art to provide Hoyer the use of a lost core or a water jacket core assembly 10 in casting the row of cylinder barrels as taught by Baltz et al in order to effectively cast a double-walled cylinder insert containing water jacket and obtain accurate cooling channels or passages at the thinner web regions between the cylinder barrels (col. 5, lines 39+).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (9:00-5:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*I-H Lin*

I.-H. Lin

1/17/08

  
JONATHAN JOHNSON  
SUPERVISORY PATENT EXAMINER